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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,867	03/16/2005	Bokke Johannes Feenstra	NL 020947	9319

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EXAMINER
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PRITCHETT, JOSHUA L

ART UNIT	PAPER NUMBER
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2872

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/527,867	<b>Applicant(s)</b> FEENSTRA ET AL.	
	<b>Examiner</b> JOSHUA L. PRITCHETT	<b>Art Unit</b> 2872	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 19-30 is/are rejected.
- 7) ☒ Claim(s) 15-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

This action is in response to Amendment filed June 17, 2008. Applicant amended claims 1-23 and 25-30.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 12, 14, 20-22 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by LePasant (US 4,636,785).

Regarding claims 1, 21 and 29, LePasant discloses providing a switchable optical element (Fig. 1) arranged to control the radiation beam the switchable optical element comprising a fluid chamber (abstract) including first (f1) and second (f2) bodies of fluid disposed relative to one another along an optical axis of the switchable optical element a first electrode (5) coupled to the first body of fluid (f1) and a second electrode (6) wherein the second body of fluid (f2) is arranged to move substantially transverse to the optical axis in only one direction toward one side of the fluid chamber in response to a voltage applied to the first and second electrodes and

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thereby change the transmissivity of the fluid chamber along the optical axis (abstract; Figs. 1 and 2).

Regarding claim 12, LePesant discloses the second electrode has a plurality of independently addressable sections (Figs. 4a-c).

Regarding claim 14, LePesant discloses the second electrode is transparent and arranges substantially transverse to the optical axis (claim 16).

Regarding claim 20, LePesant discloses the switchable optical element is at least one of a shutter, a diaphragm, a diffuse reflector or a filter (Fig. 1).

Regarding claim 22, LePesant discloses at least a further switchable optical element configured in series or parallel with the switchable optical element to provide transmission characteristics for the optical device (Fig. 9).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4, 6-13, 19, 23-28 and 30 rejected under 35 U.S.C. 103(a) as being unpatentable over LePesant (US 4,636,785) in view of Tsuboi (US 2001/0017985).

Regarding claims 2-4, LePesant teaches the invention as claimed but lacks reference to polar liquids, insulator and wettability. Tsuboi teaches the second fluid is a non-conducting fluid and the first fluid is at least one of a polar liquid and a conducting liquid (abstract; para. 0049). Tsuboi teaches a first contact layer (112) forming an insulating barrier between the second electrode and the first and second bodies of fluid within the fluid chamber (Figs. 3A-C). Tsuboi teaches the first contact layer comprises a higher wettability with respect to the second fluid than with respect to the first fluid (Figs. 3A-C). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the LePesant invention include the polar liquids, insulator and wettability of Tsuboi for the purpose of using polarized light in the optical switching mechanism, isolating the electrodes to achieve a precise result from the fluids and increasing the uniformity of the layer covering the contact layer.

Regarding claims 6-11 and 13, LePesant teaches the invention as claimed but lacks reference to electro-wetting. Tsuboi teaches a first contact area (112) having a first wettability by the first fluid and a second area (111) having a second, higher wettability by the first fluid (para. 0051-0052). Tsuboi teaches the movement of the second body of fluid is caused by electro-wetting (para. 0051-0052). Tsuboi teaches the first contact has an area of reduced separation from the second electrode (Fig. 1). Tsuboi teaches the first contact layer has an area (113) which protrudes into the fluid chamber to increase electro-wetting effect (Fig. 1). Tsuboi teaches the interior surface of the fluid chamber comprises an inhomogeneity (111 and 112). Tsuboi teaches the area of increased wettability is provided on the optical axis (para. 0051-0052). It would have been obvious to one of ordinary skill in the art at the time the invention was made

to have the LePesant invention include the electro-wetting of Tsuboi for the purpose of achieving precise predictable results.

Regarding claim 19, LePesant teaches the invention as claimed but lacks reference to the fluid density. Tsuboi teaches the use of fluids with substantially equal density (para. 0051). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the LePesant invention include the use of substantially equal density fluids as taught by Tsuboi for the purpose of preventing settling amongst the fluids thus deteriorating the usefulness of the switch.

Regarding claims 23-25, LePesant teaches the invention as claimed but lacks reference to a lens. Tsuboi teaches a lens (Fig. 23A) formed integral with the switchable optical element where the lens is an adjustable electrowetting lens (Fig. 23A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the LePesant invention include the lens of Tsuboi for the purpose of controlling the propagation of light exiting the switchable optical element.

Regarding claims 26-28 and 30, LePesant teaches the invention as claimed but lacks reference to an information layer. Tsuboi teaches a first radiation source (inherent to provide the light incident lens 131) for generating a first radiation beam providing an objective system (131-133) for converging the first radiation beam on the information layer (134). Tsuboi teaches the optical element is incorporated into the objective system (Fig. 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the radiation source since it have been held that a mere duplication of working parts of a device involves only routine skill in the art. One would have been motivated to duplicate the radiation source for the

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purpose of either determining the interaction of the object observed to different wavelengths or to record information onto the object's surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the LePesant invention include the information layer of Tsuboi for the purpose of writing information into a semi-permanent medium.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over LePesant (US 4,636,785) in view of Kumar (US 6,880,238).

LePesant teaches the invention as claimed but lacks reference to an amorphous fluoropolymer. Kumar teaches the use of an amorphous fluoropolymer electrode (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the LePesant invention include the amorphous fluoropolymer of Kumar for the purpose of creating a durable membrane electrode.

#### *Allowable Subject Matter*

Claims 15-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 15, Vacca (US 2003/0006140) teaches the use of a third fluid but lacks reference to the claimed electrode (para. 0013).

The remaining claims depend from claim 15 and are allowable for the same reasons.

### ***Response to Arguments***

Applicant's arguments, see Amendment, filed June 17, 2008, with respect to the rejection(s) of claim(s) 1, 21, 29 and 30 under Tsuboi have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration of the newly amended claim language, a new ground(s) of rejection is made in view of LePesant. Applicant amended the claim language to overcome the Tsuboi reference. The LePesant reference was added to teach the newly claimed limitations.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period



will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA L. PRITCHETT whose telephone number is (571)272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joshua L Pritchett/  
Primary Examiner  
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